

Course Name: 8 th Grade Science		Strand: Scientific Inquiry
Unit Title: Scientific Inquiry		Number of Days: 5
Student Friendly Objectives: <ul style="list-style-type: none">• Students will recall the steps of the scientific method through an activity of the teacher’s choosing• Students will remember and identify the following terms when reading an experimental procedure: independent variable, dependent variable, and control• Students will perform an experiment using the steps of the scientific method (if advanced enough teacher may want to have students design their own experiment according to the steps of the scientific method and then test it)• Students will define observation, inference, quantitative data, and qualitative data• Students will connect data, visuals, and statements with the categories of observation, inference, quantitative data, and qualitative data.		
Assessment/Evidence of Proficiency: (suggestions)		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">• Matching Activity of Scientific Method key terms (can use matching activity as pre-assess. or as review)• Sponge bob Scientific Method Worksheets and Safety worksheet*• Brain Pop movie on Scientific Method• Observation/Inference powerpoint and practice worksheet for Quan., Qual., Obs., and Inf.*• D and T activity (sentence pieces need to be cut up prior to activity)*• Lab experiment to demonstrate Scientific Method and essential vocabulary• Popcorn Book and questions* (lays out steps of Sc. Meth.)-literacy
Pre-Assessment <ul style="list-style-type: none">• the steps of scientific method review activity	Informal Assess. <ul style="list-style-type: none">• Worksheet on quantitative data, qualitative data, and inferences examples*	
Post-Assess. <ul style="list-style-type: none">• Scientific Method Quiz*		

Essential Vocabulary: problem, hypothesis, data, analyze, conclude, independent variable, dependent variable, control, observation, inference, quantitative, qualitative	

Course Name: 8 th Grade Science		Strand: Physical Science: Matter
Unit Title: Matter and Energy		Number of Days: 25
Essential Standard: 8.P.1 Understand the properties of matter and changes that occur when matter interacts in an open and closed container.		
Clarifying Objective: 8.P.1.1: Elements and Compounds: Classify matter as elements, compounds, or mixtures based on how the atoms are packed together in arrangements.		
Student Friendly Objectives: <ul style="list-style-type: none">Students will remember what matter is. (6th and 7th grade)Students will identify and illustrate the subatomic parts of an atomStudents will recognize the composition of elements, compounds, and mixturesStudents will classify matter as elements, compounds, or mixtures.		
Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">Messing with Mixtures Activity *Matter Flow Chart *Tasty Solution *Atoms Family *Matter ppt. *Atomic Structure ppt. *
Pre-Assessment: <ul style="list-style-type: none">Mini-assess. on terms about matter	Informal Assessment: <ul style="list-style-type: none">Activities	
Post-Assessment <ul style="list-style-type: none">Quiz on Atomic Structure and elements, compounds, and mixtures		
Essential Vocabulary: atom, proton, neutron, electron, element, compound, mixture, chemical property, physical property, heterogenous, homogenous, matter, mass, molecule		

Clarifying Objective: 8.P.1.2: Periodic Table: Explain how the physical properties of elements and their reactivity have been used to produce the current model of the Periodic Table of elements.		
Student Friendly Objectives: <ul style="list-style-type: none">• Students will define physical and chemical properties• Students will describe the properties and reactivity of elements.• Students will explain how the Periodic Table is organized by element properties and reactivity.•		
Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">• Group activity on what “groups” of elements have certain properties then put “unknown” elements in their correct groups on a periodic table based on their properties• Atomic Math*• Element Jeopardy*• Element Lists and review*• Chem. Vs. Phys. Prop ppt.*
Pre-Assessment <ul style="list-style-type: none">• Physical vs. Chemical properties and familiar elements warm-up activity	Informal Assess. <ul style="list-style-type: none">• Atomic Math*• Element Jeopardy	
Post-Assessment <ul style="list-style-type: none">• Element Quiz*		
Essential Vocabulary: Periodic Table, Dmitri Mendeleev, reactivity, metal, non-metal, metalloid, group, period. Density,		
Clarifying Objective: 8.P.1.3: Physical vs. Chemical changes: Compare physical changes such as size, shape and state to chemical changes that are the result of a chemical reaction to include changes in temperature, color, formation of a gas or precipitate.		
Student Friendly Objectives: <ul style="list-style-type: none">• Students will recall what physical and chemical properties are and categorize examples into these two groups.• Students will define physical change and chemical change.• Students will compare physical changes to chemical changes.		

Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration:
Pre-Assessment	Informal Assess.	<p><i>*See Science Wiki for documents and more activities/resources</i></p> <ul style="list-style-type: none"> Matching activity on chemical and physical changes* Chemical and Phys. Changes DPI ppt.* Chemical and Phys. Changes Disc. Ed video (Matter and Its Properties: Changes in Matter) and handout* Chemical Reactions Discovery ed video (Physical Science series:Chemical Reactions) and handout* Bonding Basics ppt., handout, and activity* Cartoon Chemical Reactions* (Also you tube video) http://www.youtube.com/watch?v=WcaylKzn2SY Chemical reactions videos* http://www.youtube.com/watch?v=tE4668aarck http://www.youtube.com/watch?v=ul4xRy8hcsQ Catalyst and Reaction Rate labs*
<ul style="list-style-type: none"> Matching activity on Chem. Phys. Changes (revisit after learn further)* 	<ul style="list-style-type: none"> Compare and Contrast Phys. Chem. Changes* Labs 	
Post-Assessment		
<ul style="list-style-type: none"> Phys. Vs. chem. Chart found in DPI handouts after ppt.* 		
Essential Vocabulary: physical change, chemical change, flammability, solubility, density, polarity, melting point, boiling point, specific heat, energy		
Clarifying Objective: 8.P.1.4: Law of Conservation of Mass: Explain how the idea of atoms and a balanced chemical equation support the law of conservation of mass.		
Student Friendly Objectives: <ul style="list-style-type: none"> Students will define the Law of Conservation of Mass Students will recognize a balanced vs. an unbalanced chemical equation Students will demonstrate the Law of Conservation of Mass using balanced chemical equations 		

Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">Games/worksheet on balancing equations* Use the following website for links http://www.sciencespot.net/Pages/kdzchem.htmlLab on Law of Conservation/exothermic/endothermic*
Pre-Assess.	Informal Assess. <ul style="list-style-type: none">Balancing Equation practice*Games on Balancing Equations	
Post-Assess. <ul style="list-style-type: none">Chemistry Unit Test		
Essential Vocabulary: Law of Conservation of Mass, mass, atom, chemical equation, balanced, unbalanced		

Course Name: 8 th grade Science		Strand: Life Science: Molecular Biology: Energy for Food
Unit Title: Matter and Energy		Number of Days: 15
Essential Standard: 8.L.5: Understand the composition of various substances as it relates to their ability to serve as a source of energy and building materials for growth and repair of organisms.		
Clarifying Objective: 8.L.5.1: Food provides energy: Summarize how food provides the energy and the molecules required for building materials, growth and survival of all organisms (to include plants).		
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will recall that there are different types of cells • Students will remember that cells perform various functions such as reproduction and diffusion • Students will identify the chemicals in food that provide energy • Students will examine how food gives all organisms the energy to grow and survive 		
Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none"> • Label blank Animal and Plant cells* • Notes on organelles, functions, processes, and reproduction (as needed)* • Egg Lab* (Osmosis and Diffusion)—Teacher directions at bottom of doc. • Connect 4 Game*
Pre-Assess.	Informal Assess	
<ul style="list-style-type: none"> • Assess. reviewing types of cells and cell processes 	<ul style="list-style-type: none"> • Connect 4 Game* • Egg Lab* • 	
Post-Assess.		
<ul style="list-style-type: none"> • Cell Quiz* 		
Essential Vocabulary: cell, energy, organelle, unicellular, multi-cellular, eukaryotic, prokaryotic, mitosis, meiosis, diffusion, osmosis, nutrients, protein, carbohydrate, nucleic acid, lipid		

Clarifying Objective: 8.L.5.2: Healthy diet and Respiration and Digestion: Explain the relationship among a healthy diet, exercise, and the general health of the body (emphasis on the relationship between respiration and digestion).		
Student Friendly Objectives: <ul style="list-style-type: none">Students will identify the components of a healthy dietStudents will identify the functions of the human body that relate to good healthStudents will justify how a healthy diet and exercise effect the general health of the bodyStudents will describe the relationship between respiration and digestionStudents will explain how respiration and digestion are effected by drug use and exposure to toxins.		
Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration:
Pre-Assess. <ul style="list-style-type: none">Review game of components of a healthy diet, and the functions of the resp. and dig. systems	Informal Assess. <ul style="list-style-type: none">Video Questions	<i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">Discovery Ed videos on healthy diet and human body<ul style="list-style-type: none">My Plate: Guidelines for healthy LivingMy Pyramid: Simple Steps to Healthy Living*Smart Snacking for ChildrenExercise Series: Why Exercise?Science Is Elementary: What's Inside Your Body?: Heart and Blood / Digestion and Respiration*
Post-Assess. <ul style="list-style-type: none">Project on Healthy diet, exercise and effects of toxins on resp. and digestive systems		
Essential Vocabulary: genetics, toxin, diet, cellular respiration, photosynthesis, digestion		

Course Name: 8 th grade Science		Strand: Life Science: Living Organisms: Agents of Disease
Unit Title: Disease and Biotechnology		Number of Days: 15
Essential Standard: 8.L.1: Understand the hazards caused by agents of diseases that effect living organisms		
Clarifying Objective: 8.L.1.1: Microorganisms: Summarize the basic characteristics of viruses, bacteria, fungi and parasites relating to the spread, treatment and prevention of disease.		
Student Friendly Objectives: <ul style="list-style-type: none">• Students will describe the basic characteristics of viruses, bacteria, fungi, and parasites• Students will examine the spread, treatment, and prevention of diseases, as it relates to microorganisms		
Assessment/Evidence of Proficiency:		Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none">• Bacteria and Viruses ppt.*• Protist and Fungi ppt.*• Diseases ppt. and Coming Soon ppt.*• Poison Picnic activity*• Virus Tracker* or Spread of Disease* Lab
Pre-Assess. <ul style="list-style-type: none">• Intro questions on what makes something living and what kinds of things are living	Informal Assess. <ul style="list-style-type: none">• Poison Picnic	
Post Assess. <ul style="list-style-type: none">• Virus Tracker Lab or Spread of Disease Lab• Quiz on Microbes and Disease		
Essential Vocabulary: microorganism, virus, bacteria, fungi, parasite, disease, microbiology, host cell, antibiotic, vaccine		

Clarifying Objective: 8.L.1.2: Epidemic vs. Pandemic: Explain the difference between epidemic and pandemic as it relates to the spread, treatment and prevention of disease.

Student Friendly Objectives:

- Students will describe what vectors are including examples, and how they spread infectious diseases
- Students will explore the techniques and technology that scientists use to study the spread, treatment, and prevention of disease
- Students will define epidemic and pandemic.
- Students will differentiate between epidemics and pandemics, as it relates to the spread prevention and treatment of disease

Assessment/Evidence of Proficiency:

Instructional Strategies/ Resources/Informational Technology Integration:

**See Science Wiki for documents and more activities/resources*

Essential Vocabulary: epidemic, pandemic, vector, infectious disease, non-infectious disease, pathogen, hygiene, population

Course Name: 8 th grade Science	Strand: Life Science: Living Organisms: Biotechnology
Unit Title: Disease and Biotechnology	Number of Days: 10
Essential Standard: 8.L.2: Understand how biotechnology is used to affect living organisms	
Clarifying Objective: 8.L.2.1: Biotechnology: Summarize aspects of biotechnology including: <ul style="list-style-type: none"> • Specific genetic information available • Careers • Economic benefits to North Carolina • Ethical issues • Implications for agriculture 	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will describe biotechnology and its uses in the modern world • Students will examine the careers and affects of biotechnology in North Carolina, including agriculture and economic benefits • Students will evaluate some of the controversial issues raised by biotechnology 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> Kelly has video
Essential Vocabulary: microbe, biotechnology, agriculture, ethics	

Course Name: 8 th grade Science	Strand: Life Science: Ecosystems
Unit Title: Ecosystems	Number of Days: 18
Essential Standard: 8.L.3: Understand how organisms interact with and respond to the biotic and abiotic components of their environment.	
Clarifying Objective: 8.L.3.1: Abiotic factors: Explain how factors such as food, water, shelter and space affect populations in an ecosystem	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will remember what abiotic factors and biotic factors are. • Students will describe examples of abiotic factors • Students will understand that most energy starts from the sun and how organisms get that energy • Students will support reasons for how and why abiotic factors affect populations in an ecosystem 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: abiotic, biotic, population, ecosystem, energy, habitat, organism, niche	

Clarifying Objective: 8.L.3.2 Relationships between organisms: Summarize the relationships among producers, consumers, and decomposers including the positive and negative consequences of such interactions including: <ul style="list-style-type: none"> • Coexistence and cooperation • Competition (predator/prey) • Parasitism • Mutualism 	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will remember what producers, consumers, and decomposers are • Students will remember and categorize the types of ecosystems and the kinds of organisms that live in each • Students will describe the relationships between organisms such as: cooperation, coexistence, competition, parasitism, and mutualism • Students will evaluate the positive and negative consequences of the relationships between organisms 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: producer, consumer, decomposer, coexistence, cooperation, competition, predator, prey, parasitism, mutualism, symbiotic, energy, commensalism, food web, terrestrial, aquatic	
Clarifying Objective: 8.L.3.3 Flow of Energy/Cycling of Matter: Explain how the flow of energy within food webs is interconnected with the cycling of matter (including water, nitrogen, carbon dioxide and oxygen).	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will remember where energy begins in the life cycle. • Students will recall/describe the water cycle, nitrogen cycle, carbon cycle, and oxygen cycle • Students will define food webs and give examples • Students will create a illustration or diagram of the flow of energy through food webs • Students will connect the flow of energy from the food web with the cycles of matter. 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational

	Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: water cycle, nitrogen cycle, carbon cycle, oxygen cycle, autotroph, heterotroph, food chain, transpiration, producer, consumer, fertilizer	

Course Name: 8 th grade Science	Strand: Earth Science: Earth Systems: Hydrosphere
Unit Title: Hydrosphere	Number of Days: 35
Essential Standard: 8.E.1 Understand the hydrosphere and the impact of humans on local systems and the effects of the hydrosphere on humans. (**Note: 1.3 will come before 1.2)	
Clarifying Objective: 8.E.1.1 Structure of hydrosphere: Explain the structure of the hydrosphere including: • Water distribution on earth • Local river basins and water availability	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will recall the steps of the water cycle and the location of water on Earth • Students will categorize the ways water is distributed on Earth. • Students will identify the location of local water sources • Students will evaluate the availability of water locally due to variations of geography and usage 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>

Essential Vocabulary: water cycle, evaporation, condensation, precipitation, infiltration, transpiration, runoff, groundwater, solvent, river basin, watershed, well, aquifer, ocean basin, hydrosphere	
Clarifying Objective: 8.E.1.3 Water quality and supplies: Predict the safety and potability of water supplies in North Carolina based on physical and biological factors, including: • Temperature • Dissolved oxygen • pH • Nitrates and phosphates • Turbidity • Bio-indicators	
Student Friendly Objectives: <ul style="list-style-type: none"> Students will describe the physical/chemical/biological variables that effect the health of a water system to include: temperature, dissolved oxygen, pH, nitrates and phosphates, turbidity, and bio-indicators Students will predict the safety of a water supply based on variable data provided to them. 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: water quality, chemical/physical/biological variables, turbidity, temperature, pH, nitrates, phosphates, salinity, bio-indicators	
Clarifying Objective: 8.E.1.2 Oceans: Summarize evidence that Earth's oceans are a reservoir of nutrients, minerals, dissolved gases, and life forms: • Estuaries • Marine ecosystems • Upwelling • Behavior of gases in the marine environment • Value and sustainability of marine resources • Deep ocean technology and understandings gained	
Student Friendly Objectives: <ul style="list-style-type: none"> Students will recognize the oceans role in the water cycle Students will describe the components of ocean water to include: minerals, organisms, and the sources 	

of those components

- Students will identify and illustrate that the ocean is divided into vertical and horizontal zones that are dependent on light, temperature, and pressure variations.
- Students will understand what the types of currents are with emphasis on upwelling.
- Students will describe the motion of waves, currents, and tides, and conclude that this effects how nutrients are distributed throughout the oceans
- Students will describe the different ocean ecosystems and classify organisms by habitat
- Students will examine the characteristics of estuaries to conclude their importance in the larger ocean ecosystem.
- Students will understand that microbes are the basis of open ocean and deep ocean food webs.
- Students will distinguish and justify that terrestrial and aquatic food webs are interconnected and affected by the level of nutrients.
- Students will express that deep ocean exploration and technology continues to provide information about the ocean
- Students will measure the value and sustainability of ocean resources

Assessment/Evidence of Proficiency:

Instructional Strategies/ Resources/Informational Technology Integration:

**See Science Wiki for documents and more activities/resources*

Essential Vocabulary: water cycle, minerals/nutrients, pressure, current, upwelling, downwelling, thermohaline current, ecosystem, waves, tides, estuary, salt marsh, intertidal, coral reef, kelp forest, hydrothermal vent, nursery, finite, resources, plankton, chemosynthetic bacteria, algae (protists), sustainable, food web, aquatic, terrestrial

Clarifying Objective: **8.E.1.4 Water and health of humans:** Conclude that the good health of humans requires:

- Monitoring of the hydrosphere
- Water quality standards
- Methods of water treatment
- Maintaining safe water quality
- Stewardship

Student Friendly Objectives: <ul style="list-style-type: none"> • Students will understand the changes in water safety importance, and the shift of concern from disease causing organisms to pollution in the US • Students will describe/illustrate the processes for water treatment • Students will define and compare point and non-point pollution, then categorize examples of each • Students will understand that because the majority of the world's population is coastal there are many different laws regulating water pollution • Students will analyze the effects of water pollution on habitats and the environment resulting in economic trade-offs • Students will conclude that the good health of humans and other organisms is a result of making informed decisions about water stewardship 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: disease, pollution, drinking water standard, Clean Water Act, Safe Drinking Act, industrial, water treatment, aeration, flocculation, contamination, point source pollution, non-point source pollution, septic system, sewage system, overfishing, degradation, stewardship	

Course Name: 8 th grade Science	Strand: Earth Science: Earth's History
Unit Title: Earth's History and Evolution	Number of Days: 10
Essential Standard: 8.E.2 Understand the history of Earth and its life forms based on evidence of change recorded in fossil records and landforms.	

Clarifying Objective: 8.E.2.1 Rock Layers and Dating: Infer the age of Earth and relative age of rocks and fossils from index fossils and ordering of rock layers (relative dating and radioactive dating).	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will recall that the Earth is made of layers of rock • Students will classify the earth processes that have been constant through time such as erosion, movement of lithospheric plates, and changes in atmospheric composition • Students will define and apply the Law of Superposition • Students will define and compare absolute dating with relative dating of rocks/fossils (to include Carbon dating and uranium dating) • Students will elaborate on how Earth has changed over time using evidence provided. 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: sedimentary rock, fossil, erosion, lithospheric plates, index fossil, Law of Superposition, absolute dating, relative dating, radioactive dating, divergent boundary, transform boundary, convergent boundary, geology	
Clarifying Objective: 8.E.2.2 Fossils and evidence in rock layers: Explain the use of fossils, ice cores, composition of sedimentary rocks, faults, and igneous rock formations found in rock layers as evidence of the history of the Earth and its changing life forms.	

Student Friendly Objectives: <ul style="list-style-type: none"> • Students will recall how sedimentary, igneous, and metamorphic rock are formed • Students will create a visual of the rock cycle to show that rocks bear evidence of the minerals, temperatures, and forces that created Earth • Students will understand/remember the continental drift theory, the components of plate tectonic movement, and the Law of Superposition • Students will identify the different types of faults and their relationship with formation of rock layers • Students will incorporate the evidence provided from rocks, ice cores, and fossils to conclude that Earth's life forms, climate, and surface have changed over time. • Students will sequence events in Earth's history according with the Geologic Time Scale and the evidence from rock layers. 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none"> • Ask an Ice Core or Fossil Stations
Essential Vocabulary: sedimentary rock, igneous rock, metamorphic rock, rock cycle, minerals, continental drift theory, plate tectonics, Law of Superposition, fault, climate, geologic time scale, era, Precambrian, Paleozoic, Mesozoic, Cenozoic, Pangaea	

Course Name: 8 th grade Science	Strand: Life Science: Evolution and Genetics
Unit Title: Earth's History and Evolution	Number of Days: 15
Essential Standard: 8.L.4 Understand the evolution of organisms and landforms based on evidence, theories and processes that impact the Earth over time. (***note the 2nd objective comes before the 1st)	

Clarifying Objective: 8.L.4.2 Adaptation and genetic variation: Explain the relationship between genetic variation and an organism's ability to adapt to its environment	
Student Friendly Objectives: <ul style="list-style-type: none"> Students will recall that there are variations in genetics which cause each organism to be different, even members of the same species Students will recall the traits/characteristics that help an organism to survive Students will define adaptation and analyze examples Students will explain the relationship between genetic variation and an organism's ability to adapt to its environment 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i> <ul style="list-style-type: none"> Moth examples/acitivity
Essential Vocabulary: genetic variation, trait, adaptation, diversity, natural selection, morphological, biochemical, behavioral features	
Clarifying Objective: 8.L.4.1 Classification and theory of evolution: Summarize the use of evidence drawn from geology, fossils, and comparative anatomy to form the basis for biological classification systems and the theory of evolution.	
Student Friendly Objectives: <ul style="list-style-type: none"> Students will describe how changes in environmental conditions can affect the survival of organisms (ex. Pangaea to Ice Ages) Students will explain how changes in sea level and plate movement effect evolution of living things 	

- Students will define natural selections and understand the idea that organisms who are best adapted will survive, while those that can't adapt will go extinct (including mass extinction)
- Students will determine that there are similar features in organisms that are related such as homologous and analogous structures and embryological similarities.
- Students will understand that evolution takes several generations to occur
- Students will determine that biological adaptations include changes in structures, behaviors, and physiology that enhance survival and reproductive success.
- Students will understand that the biological classification system is used to organize all life on Earth
- Students will interpret how the classification system shows relationships between various modern organisms, as well as between historical and modern organisms

Assessment/Evidence of Proficiency:

Instructional Strategies/ Resources/Informational Technology Integration:

**See Science Wiki for documents and more activities/resources*

Essential Vocabulary: physiological, classification system, theory of evolution, diversity, kingdom, phylum, class, order, family, genus, species, population, homologous structures, analogous structures, Pangaea, Ice age, continental drift, embryological, vestigial structures, fossils, extinct, mass extinction, taxonomy

Course Name: 8 th grade Science	Strand: Physical Science: Energy
Unit Title: Energy (Conservation and Transfer)	Number of Days: 6
Essential Standard: 8.P.2 Explain the environmental implications associated with the various methods of obtaining, managing, and using energy resources	
Clarifying Objective: 8.P.2.1 Environmental Consequences when dealing with Energy: Explain the environmental consequences of the various methods of obtaining, transforming, and distributing energy	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will describe and categorize the methods of obtaining, transforming, and distributing energy • Students will understand that energy is neither created nor destroyed • Students will generate a visual that shows the environmental consequences for each of the various methods used for obtaining, transforming, and distributing energy 	
Assessment/Evidence of Proficiency:	Instructional Strategies/ Resources/Informational Technology Integration: <i>*See Science Wiki for documents and more activities/resources</i>
Essential Vocabulary: thermal energy, mechanical energy, chemical energy, nuclear energy, solar energy, hydroelectric, wind energy, kinetic energy, potential energy, electromagnetic energy, energy efficiency, solar cell, conversion	
Clarifying Objective: 8.P.2.2 Renewable vs. non-Renewable resources and conservation: Explain the implications of the depletion for renewable and nonrenewable energy resources and the importance of conservation	
Student Friendly Objectives: <ul style="list-style-type: none"> • Students will define renewable and non-renewable 	

- Students will classify common resources as renewable or non-renewable
- Students will analyze the implications of the depletion of renewable and non-renewable resources
- Students will explain some of the ways that we can conserve energy

Assessment/Evidence of Proficiency:

**Instructional Strategies/ Resources/Informational
Technology Integration:**

**See Science Wiki for documents and more
activities/resources*

Essential Vocabulary: fossil fuel, solar and wind energy, biofuel, conservation, renewable resource, non-renewable resource, depletion